

Claim 66 has been amended to replace "said ceramic magnet" with --a ceramic magnet--.

New claim 94 is supported at page 5, lines 17-19 of the specification as filed.

The Information Disclosure Statement

The Office Action stated that the Information Disclosure Statement filed March 29, 2001 fails to comply with 37 C.F.R. §198(a)(3) because it does not include a concise explanation of the relevance of each patent listed that is not in the English language. It is noted that French patent 1,101,502 was lined out in the 1449 Form submitted with the Information Disclosure Statement.

It is respectfully requested that the Examiner consider the Information Disclosure Statement filed herewith in which French patent 1,101,502 has been presented again, along with a concise explanation of its relevance and indicate on the record that all references have been considered.

The Rejections

The 35 U.S.C. §112 Rejections

Claims 43-62 and 65-78 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In particular, the recitation "home" in claim 43, line 3 and in claims 44-47, line 2 was stated to be indefinite. For improved clarity, the phrase "seek home" in claims 43 and 44-47 has been replaced with --move toward the form--.

The recitation "at least about" in claim 43, line 3 and claims 48-54, lines 1 and 2, claims 56-58, lines 1 and 2 and in claims 67, lines 1 and 2 was also stated to be indefinite. Applicants note that claim 51 does not recite "at least about". Applicants respectfully disagree that the use of "about" in claims 43, 48-54, 56-58, and 67 is indefinite. The use of "about" encompasses measurement errors and uncertainty. In particular, measurement of the distance at which the

removable piece begins to move toward the form (i.e. begins to seek home), when measured by a tester holding the removable piece, is a measurement which may vary somewhat from one tester to another.

The recitation “more than about” in claims 45-47 was stated to be indefinite. Applicants respectfully disagree that the use of “more than about” in claims 45-47 is indefinite. As previously discussed, measurement of the distance at which the removable piece begins to move toward the form, when measured by a tester holding the removable piece, is a measurement which may vary somewhat from one tester to another. Therefore, use of “about” in claims 45-47 is consistent with the amount of precision permitted by the measurement.

The recitation “no more than about” in claim 55, lines 1 and 2 and in claim 78, lines 1 and 2 was stated to be indefinite. Applicants respectfully disagree that the use of “no more than about” in claims 55 and 78 is indefinite. The use of “about” encompasses measurement variations.

The recitation “no greater than about” in claims 59 and 60, lines 1 and 2 was stated to be indefinite. Applicants respectfully disagree that the use of “no greater than about” in claims 59 and 60 is indefinite. The use of “about” encompasses measurement variations.

In claim 66, line 2 the recitation “said ceramic magnet” was stated to lack proper antecedent basis. Amended claim 66 replaces “said ceramic magnet” with --a ceramic magnet”.

The recitation “the other of said magnetic assembly or said circular face” in line 3 of claims 70 and 71 was stated to lack proper antecedent basis. Applicants note that neither claim 70 nor claim 71 recites “the other of said magnetic assembly or said circular face.” Claim 70 refers to the form of claim 43 wherein said magnetic system comprises a disc of attracted material for mating with said magnetic assembly which presents a planar circular face. In claim 70, the disc of attracted material presents a planar circular face and mates with the magnetic assembly. Claim 74 recites the form of claim 70 wherein the magnetic system comprises at least one mating pin on one of said magnetic assembly or said circular face and a mating hole

positioned to mate with said mating pin on the other of said magnetic assembly or said circular face. Similarly, claim 75 recites the form of claim 70 wherein the magnetic system comprises at least one index pin on one of said magnetic assembly or said circular face and an index hole positioned to mate with said mating pin on the other of said magnetic assembly or said circular face. Applicants respectfully request clarification of the lack of proper antecedent basis for claims 70 and 71.

Applicants note that although claims 61, 62, 65, 68-69, and 72-77 were stated as being rejected under 35 U.S.C. §112, second paragraph, no specific rejection of these claims was made in the Office Action dated October 22, 2002. In the absence of a specific rejection of these claims, Applicants assume these claims to be allowable.

In view of all the foregoing, Applicants respectfully request reconsideration and withdrawal of the 35 U.S.C. §112 rejections of claims 43-62 and 65-78.

The 35 U.S.C. §103 Rejections

Vigne

Claims 43-60, 71-73, 77 and 78 were rejected under 35 U.S.C. §103(a) as being unpatentable over Vigne alone (U.S. Patent 5,727,717). The Office Action states:

Claims 43-60 and 78 distinguish over Vigne in requiring the specific distances recited therein at which the magnetic assembly begins to seek home from the form, in requiring specific gaussses of the depth-of-pull of the magnetic assembly, and in requiring a specific on-contact strength of the magnetic assembly.

These specific distances at which the magnetic assembly begins to seek home from the form, specific gaussses of the depth-of-pull of the magnetic assembly, and specific on-contact strength of the magnetic assembly merely represent obvious choices in engineering design to one of ordinary skill in the art at the time the invention was made for optimum connector performance and for optimum user convenience of the members of the form.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have utilized the specific distances, gaussses and on-contact strengths noted above in the form of Vigne for the reasons noted.

Applicants respectfully request clarification of the reasons for rejection of claims 71-73 and 77 over Vigne. In the absence of reference to the relevant teachings of the prior art relied upon, Applicants assume claims 71-73 and 77 to be allowable over Vigne.

The present invention provides a form with magnetically attachable parts. The form may be life-size. Design of such a form requires careful selection of the magnetic system which attaches parts to the form. If the on-contact strength of the magnetic assembly is too small, the part can be too easily dislodged. If the on-contact strength of the magnetic assembly is too large, the part can be too difficult to remove from the form. Furthermore, although it does not appear to have been generally recognized, the depth of pull of the magnetic assembly (force exerted at a given distance from the magnetic assembly, page 3, line 18) also affects the performance of the form. If the depth of pull is too small, the part will not be pulled into place until it is almost in touching alignment. If the depth of pull is too great, the part may engage too quickly and strongly, perhaps pinching the operator's fingers.

Vigne discloses magnetically coupled joints for mannequins and forms. In Vigne's preferred embodiment, the magnetic material in the surface of one part is in the form of a ferromagnetic plate and the magnetic material in the surface of the other part comprises the ends of two pole pieces coupled to respective poles of a permanent magnet (Col. 2, lines 40-44). Vigne states that his preferred arrangement enables a surprisingly small permanent magnet to generate sufficient magnetic attraction (e.g. a ferrite block 25 mm thick in the direction of magnetism with pole pieces of 3/16 inch thick bright mild steel) (Col. 2, lines 45-54). Vigne also states that with his joints it may be necessary to get the male member partly into the socket or at least generally aligned therewith, but that the process is much less exacting than trying to align the T-shaped projection of the traditional LT fitting with the slot that is to receive it (Col. 1, lines 60-66). In contrast, it is not necessary in the present invention to generally align the parts of the magnetic assembly or to partly assemble them.

Vigne does not appear to teach or suggest the need for modification of the magnet design disclosed in his patent. In particular, Vigne does not appear to teach or suggest the advantages

of using a magnet design with a greater depth of pull that can cause the removable piece to begin to move toward the form at a greater distance. As evidenced by Table 2, page 15 of the present application, the particular magnet design described by Vigne has a depth of pull of 110 gauss at a distance of 1 inch, versus 240 gauss for the neodymium cup assembly of the present invention. Since the Vigne patent does not provide motivation for making a magnetic assembly with a greater depth of pull than that disclosed in the patent, no *prima facie* case of obviousness has been made out.

In addition, Exhibit A, the enclosed declaration of Seth L. Patterson, presents evidence of the commercial success of the present invention, providing secondary indicia of non-obviousness which would overcome any obviousness rejections which could be made (although applicants submit that no proper obviousness rejection can, in fact, be made out).

In view of all the foregoing, Applicants respectfully request reconsideration and withdrawal of the rejection of claims 43-60, 71-73, 77 and 78.

Gabrielli

Claims 43-62, 68-75, 77 and 78 were rejected under 35 U.S.C. §103(a) as being unpatentable over Gabrielli (U.S. Patent 4,609,325) alone. The Office Action states:

Note the magnetic members 5, 10.

With respect to claim 68, note flange 17 or 7.

Regarding claims 74 and 75, note pin 17 or 7.

Claims 43-60 and 78 distinguish over Gabrielli in requiring the specific distances recited therein at which the magnetic assembly begins to seek home from the form, in requiring specific gaussses of the depth-of-pull of the magnetic assembly, and in requiring a specific on-contact strength of the assembly...It would have been obvious to one of ordinary skill in the art at the time the invention was made to have utilized the specific distances, gaussses and on-contact strengths noted above in the form of Gabrielli for the reasons noted.

Applicants respectfully request clarification of the reasons for rejection of claims 61-62, 68-75, and 77 over Gabrielli. In the absence of reference to the relevant teachings of the prior art relied upon, Applicants assume claims 61-62, 68-75, and 77 to be allowable over Gabrielli.

Gabrielli relates to a robot wrist rather than to a mannequin joint. In particular, Gabrielli relates to a robot wrist in which an arm connected to the robot and an end piece adapted to carry a part are connected through connecting elements which allow free movement of the end piece with respect to the arm and provide self centering of the end piece (col. 1, lines 20-28). In Gabrielli's robot wrist, the connecting means comprise two elements magnetized in the direction of their axes, which are interposed between the arm and the end piece, and disposed so as to attract each other mutually while being separated from each other by balls. The balls are preferably magnetized. They thus provide a double function. In the presence of a lateral force exerted on the end piece, they allow freedom of movement; in the absence of a lateral force, they transmit the magnetic flux and ensure centering by dividing themselves homogeneously between the two magnetized faces (col. 1, lines 45-57). As described at column 2, lines 34-41 and as shown in the Figures, the magnetized elements are magnetized disks which do not appear to be used with one or more pole pieces. Applicants note that label 7 in Gabrielli's figures refers to a screw fixing non-magnetic washer 6 to the end face of end part 3 rather than to a pin or flange (col. 2, lines 38-39) and that label 17 refers to a part to be carried by the end piece of the robot wrist rather than to a pin or flange (col. 2, line 4).

Since Gabrielli relates to a robot wrist rather than to a mannequin joint, Gabrielli does not appear to teach or suggest modifications of his robot wrist to make it more suitable for use as a mannequin joint. For example, Gabrielli does not suggest eliminating the balls separating the two magnetized elements since they are an essential part of his wrist. Claim 43, from which claims 43-62, 68-75, 77 and 78 depend, does not list a plurality of balls as an element. Gabrielli also does not appear to suggest the cup magnetic assembly of claim 61, instead disclosing magnetized disks which do not appear to have a pole piece. Applicants respectfully disagree that Gabrielli discloses the flange of claim 68, the mating pin and hole of claim 74 or the index pin and hole of claim 75.

In view of all the foregoing, no *prima facie* case of obviousness has been or can be made out and applicants respectfully request reconsideration and withdrawal of the rejection of claims 43-62, 68-75, 77 and 78.

In addition, Exhibit A, the enclosed declaration of Seth L. Patterson, presents evidence of the commercial success of the present invention, providing secondary indicia of non-obviousness which would overcome any obviousness rejections which could be made (although Applicants submit that no proper obviousness rejection can, in fact, be made out).

Sato

Claims 43-61, 71-73, 77 and 78 are rejected under 35 U.S.C. §103(a) as being unpatentable over Sato (U.S. Patent 4,038,775) alone. The Office Action states:

Claims 43-60 and 78 distinguish over Sato in requiring the specific distances recited therein at which the magnetic assembly begins to seek home from the form, in requiring specific gaussses of the depth-of-pull of the magnetic assembly, and in requiring a specific on-contact strength of the assembly...It would have been obvious to one of ordinary skill in the art at the time the invention was made to have utilized the specific distances, gaussses and on-contact strengths noted above in the form of Sato for the reasons noted.

Applicants respectfully request clarification of the reasons for rejection of claims 61, 71-73, and 77 over Sato. In the absence of reference to the relevant teachings of the prior art relied upon, Applicants assume claims 61, 71-73, and 77 to be allowable over Sato.

Sato relates to a doll with detachable appendages. As shown in Figures 1-6 and described at column 2, lines 52-56 of Sato, the doll body (1) has a permanent magnet (4) sandwiched between a pair of pole pieces (5,6). The appendages have spherical joint portions which are made of magnetic material (i.e. attracted material) (col. 3, lines 7-10). The magnetic joint means is intended to allow relative, universal movement of the appendages but insure a temporary fixing of these appendages in a give position within their movable range (col. 1, lines 53-57).

Since Sato relates to a doll rather than to a mannequin, Sato does not appear to teach or suggest modifications of his doll joint to make it more suitable for use as a mannequin joint. For example, Sato does not appear to suggest eliminating the limitation that the appendage have a

spherical joint portion of attracted material. When sized up for a mannequin, such a joint would appear to be impractically heavy. In addition, the construction shown in Sato's Figure 1 where the permanent magnet extends over substantially the length of the doll body would also be impractically heavy for a mannequin. Sato also does not appear to suggest the cup magnetic assembly of claim 61, instead disclosing a sandwich type magnetic assembly with a pair of pole pieces.

In view of all the foregoing, no *prima facie* case of obviousness has been made out and Applicants respectfully request reconsideration and withdrawal of the rejections of claims 43-61, 71-73, 77 and 78 .

In addition, Exhibit A, the enclosed declaration of Seth L. Patterson, presents evidence of the commercial success of the present invention, providing secondary indicia of non-obviousness which would overcome any obviousness rejections which could be made (although applicants submit that no proper obviousness rejection can, in fact, be made out).

Teagarden

Claims 43-62, 68-75, 77 and 78 were rejected under 35 U.S.C. §103(a) as being unpatentable over Teagarden (US Patent 3,246,422) alone. The Office Action states:

With respect to claims 68 and 69, note flange 3b.

Regarding claims 74 and 75, note pin 3b.

Claims 43-60 and 78 distinguish over Teagarden in requiring the specific distances recited therein at which the magnetic assembly begins to seek home from the form, in requiring specific gaussses of the depth-of-pull of the magnetic assembly, and in requiring a specific on-contact strength of the assembly...It would have been obvious to one of ordinary skill in the art at the time the invention was made to have utilized the specific distances, gaussses and on-contact strengths noted above in the form of Teagarden for the reasons noted.

Applicants respectfully request clarification of the reasons for rejection of claims 61-62, 68-75, and 77 over Teagarden. In the absence of reference to the relevant teachings of the prior art relied upon, Applicants assume claims 61-62, 68-75, and 77 to be allowable over Teagarden.

Teagarden relates to dolls having magnetically connected components, for example magnetically connected body portions, arms and legs. In Teagarden's invention, circular component-connecting magnets project from the components, which magnets are adapted to be engaged in socket assemblies being lined with magnetizable material (col. 1, lines 26-30). Teagarden's magnetic assembly consists of a "relatively thick" circular magnet; no pole piece appears to be used (col. 1, line 65, Figure 3). Applicants respectfully request clarification of where alleged figure label 3b, allegedly referring to a flange and a pin, appears in the drawings or the specification. Applicants note that figure label 36 refers to a rivet which holds the magnet in place (col. 1, lines 65-70).

Since Teagarden relates to a doll rather than to a mannequin, Teagarden does not appear to teach or suggest modifications of her doll joint to make it more suitable for use as a mannequin joint. For example, simple scaling up of Teagarden's magnetic joint design for use in a mannequin should result in an impractically heavy magnetic assembly. Teagarden also does not appear to suggest the cup magnetic assembly of claim 61, instead disclosing a magnet which does not appear to have a pole piece. Applicants respectfully disagree that Teagarden discloses the use of the flange of claim 68, the mating pin and hole of claim 74, or the index pin and hole of claim 75.

In view of all the foregoing, no *prima facie* case of obviousness has been made out and Applicants respectfully request reconsideration and withdrawal of the rejection of claims 43-62, 68-75, 77 and 78.

In addition, Exhibit A, the enclosed declaration of Seth L. Patterson, presents evidence of the commercial success of the present invention, providing secondary indicia of non-obviousness which would overcome any obviousness rejections which could be made (although applicants submit that no proper obviousness rejection can, in fact, be made out).

Osmond

Claims 43-62 and 68-78 were rejected under 35 U.S.C. §103(a) as being unpatentable over Osmond (US Patent 3,168,227) alone. The Office Action states:

With respect to claims 68 and 69, note flange 22 (Figs. 2-4).

Regarding claims 74 and 75, note pin 22 (Figs. 2-4).

Claims 43-60 and 78 distinguish over Osmond in requiring the specific distances recited therein at which the magnetic assembly begins to seek home from the form, in requiring specific gaussses of the depth-of-pull of the magnetic assembly, and in requiring a specific on-contact strength of the assembly...It would have been obvious to one of ordinary skill in the art at the time the invention was made to have utilized the specific distances, gaussses and on-contact strengths noted above in the form of Osmond for the reasons noted.

Applicants respectfully request clarification of the rejections of claims 61-62 and 68-77 over Osmond. In the absence of reference to the relevant teachings of the prior art relied upon, Applicants assume claims 61-62, 68- 77 to be allowable over Osmond.

Osmond relates to a doll manikin with detachable components. As described, the doll manikin has attachable and detachable arms and head. The shoulder portions of the body are provided with recesses defining outwardly opening sockets, with a permanent magnet anchored in the bottom portion of each socket. The attachable upper ends of the arms are provided with a projecting permanent magnet shaped and sized to fit within the socket (col., 2, lines 38-50). The head may attach in a similar fashion or may screw on. As shown in the Figures, the magnets appear to be disk-like and do not appear to be used with one or more pole pieces. Furthermore, two permanent magnets are used rather than one magnet and an attracted material. Applicants note that figure label 22 refers to a fastener which serves to hold the magnet to the end of the arm rather than referring to a pin or a flange (col. 3, lines 20-25).

Since Osmond relates to a doll rather than to a mannequin, Osmond does not appear to teach or suggest modifications of her doll joint to make it more suitable for use as a mannequin joint. For example, simple scaling up of Osmond's magnetic joint design for use in a mannequin should result in an impractically heavy magnetic system. Osmond also does not appear to suggest the cup magnetic assembly of claim 61, instead disclosing a magnet which does not appear to have a pole piece. Applicants respectfully disagree that Osmond discloses the use of the flange of claim 68, the mating pin and hole of claim 74, or the index pin and hole of claim 75.

In view of all the foregoing, no *prima facie* case of obviousness has been made out and Applicants respectfully request reconsideration and withdrawal of the rejection of claims 43-62, and 68-78.

In addition, Exhibit A, the enclosed declaration of Seth L. Patterson, presents evidence of the commercial success of the present invention, providing secondary indicia of non-obviousness which would overcome any obviousness rejections which could be made (although applicants submit that no proper obviousness rejection can, in fact, be made out).

Hunter

Claims 43-62 and 68-78 were rejected under 35 U.S.C. §103(a) as being unpatentable over Hunter (U.S. Patent 3,140,712) alone. The Office Action states:

With respect to claim 68, note flange 16.

Regarding claims 74 and 75, note pin 16.

Claims 43-60 and 78 distinguish over Hunter in requiring the specific distances recited therein at which the magnetic assembly begins to seek home from the form, in requiring specific gaussses of the depth-of-pull of the magnetic assembly, and in requiring a specific on-contact strength of the assembly...It would have been obvious to one of ordinary skill in the art at the time the invention was made to have utilized the specific distances, gaussses and on-contact strengths noted above in the form of Hunter for the reasons noted.

Applicants respectfully request clarification of the rejections of claims 61-62 and 68-77 over Hunter. In the absence of reference to the relevant teachings of the prior art relied upon, Applicants assume claims 61-62, 68-77 to be allowable over Hunter.

Hunter relates to articulated prosthetic joints which permit bones to be both pivotal and slidable with respect to one another. The joint consists of a magnet means that is associated with the articulated end of the first bone member and magnetizable means associated with the articulated end of the second bone member (col. 1, lines 67-70). The magnet means is described as a permanent magnet (e.g. a horseshoe magnet) or electromagnet (col. 3, lines 1-5). No pole piece appears to be used with Hunter's magnet. Hunter's magnetizable means is described as a

cup or another magnet (col. 3, lines 10-14). Applicant notes that figure label 16 relates to a screw used to hold the magnetizable cup within the socket rather than to a pin or a flange (col. 2, lines 24-26).

Since Hunter relates to a prosthetic joint rather than to a mannequin joint, Hunter does not appear to teach or suggest modifications of his prosthetic joint to make it more suitable for use as a mannequin joint. For example, it is unlikely that Hunter's prosthetic joint is designed to be as easily separable as a mannequin joint would require. Hunter also does not appear to suggest the magnetic system of claims 61 having an attracted material and a magnetic assembly comprising a magnet placed within a cup pole piece. Instead, Hunter discloses a magnet which does not appear to have a pole piece. In addition, Applicants respectfully disagree that Hunter discloses the use of the flange of claim 68, the mating pin and hole of claim 74, or the index pin and hole of claim 75.

In view of all the foregoing, no *prima facie* case of obviousness has been made out and Applicants respectfully request reconsideration and withdrawal of the rejection of claims 43-62, and 68-78.

In addition, Exhibit A, the enclosed declaration of Seth L. Patterson, presents evidence of the commercial success of the present invention, providing secondary indicia of non-obviousness which would overcome any obviousness rejections which could be made (although applicants submit that no proper obviousness rejection can, in fact, be made out).

The Allowable Claims

The Office Action dated October 22, 2002 stated that claims 65-67 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. §112, second paragraph, set forth in the Office Action and to include all the limitations of the base claim and any intervening claims. Claim 66 has been rewritten to overcome the 35 U.S.C. §112 rejection. Claim 65 depends from claim 61 and claims 66 and 67 depend from claim 65. As discussed above, Applicants believe claim 61 to be allowable over the cited art of record. Therefore, claims 65-67 have not been rewritten in independent form.

The new claim

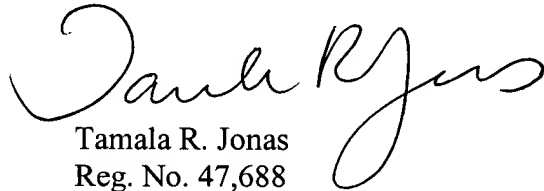
New claim 94 depends from claim 61, relating to a form wherein the magnetic assembly is a cup magnetic assembly comprising a circular cup serving as a pole piece. New claim 94 also depends from claim 43, since claim 61 depends from claim 43. As previously discussed, Applicants submit that both claims 43 and 61 are allowable over the cited art of record.

CONCLUSION

This application being in condition for allowance, passage to issuance is respectfully requested.

It is believed that no fee is due with this submission. If this is incorrect, please charge any deficiency or fee for extension of time required to Deposit Account 07-1969.

Respectfully submitted,


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